

Preliminary Amendment

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) A method for manufacturing a glass substrate for an information recording medium manufactured by polishing the surface of a raw material glass plate, the method ~~being characterized in that~~ comprising:

~~the polishing is divided into two steps, a step for performing a first polishing process to roughly polish the surface of the raw material glass plate to be smooth; and~~

~~a step for performing a second polishing process to finely polish the surface of the roughly polished glass raw plate to be smoother;~~

wherein the first polishing process ~~is a process,~~  
includes:

using a polishing pad made of a synthetic resin foam, ~~that slides~~ and sliding the polishing pad on the surface of the glass raw plate while supplying a polishing agent to roughly polish the surface;

performing a pad dressing process ~~is performed~~ on the polishing pad in advance before being used in the first polishing process; and

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~~the pad dressing process is a process for~~ polishing the surface of the polishing pad by sliding the polishing pad on a pad dresser including abrasive grains.

2. (currently amended) The method for manufacturing a glass substrate for an information recording medium according to claim 1, ~~characterized in that~~ wherein the pad dressing process is performed so that the product of load in ~~(g/cm<sup>2</sup>)~~ applied to the polishing pad by the pad dresser and task time ~~(min)~~ in minutes required for the pad dressing process is 500 to 3000.

3. (currently amended) The method for manufacturing a glass substrate for an information recording medium according to claim 1 ~~or 2~~, ~~characterized in that~~ wherein the pad dressing process is performed so that polishing rate, which is a value indicating polishing amount per unit time in the first polishing process, is maintained in a predetermined range.

4. (currently amended) The method for manufacturing a glass substrate for an information recording medium according to claim 3, ~~characterized in that~~ wherein, when the polishing rate obtained immediately after the pad dressing process is performed is used as a reference value, the polishing rate is maintained between 80 and 100% of the reference value, and the pad dressing process is performed when the polishing rate is less than 80% of the reference value.

5. (currently amended) The method for manufacturing a glass substrate for an information recording medium according to ~~any one of claims 1 to 4, characterized in that~~ wherein the grit of the pad dresser is #325 to #600.

6. (currently amended) The method for manufacturing a glass substrate for an information recording medium according to ~~any one of claims 1 to 5, characterized in that~~ wherein the pad dresser is set such that when the pad dresser is arranged on the surface of the polishing pad, the weight applied to the surface of the polishing pad per 1 cm<sup>2</sup> is between 0.5 and 2.0 g.

7. (currently amended) The method for manufacturing a glass substrate for an information recording medium according to ~~any one of claims 1 to 6, characterized in that~~ wherein the rough polishing of the raw material glass plate in the first polishing process is performed until the glass raw plate has an arithmetic mean roughness ~~(Ra), which is~~ as measured by an atomic force microscope, of 1.0 nm or less, an undulation height ~~(Wa), which is~~ as measured by a multi-functional disc interferometer with a measuring wavelength ~~(λ)~~ of 0.4 to 5.0 mm, of 1.0 nm or less, and a microscopic undulation height ~~(NRa), which is~~ as measured by a three-dimensional surface structure analyzing microscope with a measuring wavelength ~~(λ)~~ of 0.2 to 1.4 mm, is 0.3 nm or less.

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8. (currently amended) The method for manufacturing a glass substrate for an information recording medium according to ~~any one of claims 1 to 7, characterized in that~~ wherein the first polishing ~~step is a process~~ is for roughly polishing the surface of the raw material glass plate in two stages, pre-polishing and post-polishing, wherein load applied to the glass raw plate by the polishing pad in the first polishing process is greater during pre-polishing than during post-polishing.

9. (currently amended) The method for manufacturing a glass substrate for an information recording medium according to ~~any one of claims 1 to 7, characterized in that~~ wherein after undergoing the pad dressing process, the surface of the polishing pad has an average undulation height, ~~which is as~~ measured by a stylus measuring instrument with a measuring wavelength ~~( $\lambda$ )~~ of 0.25 to 1.4 mm, of 4 to 25  $\mu\text{m}$ , and a surface roughness, ~~which is as~~ measured with a cut-off value ~~( $\lambda\text{C}$ )~~ of 2.5 mm, of 3 to 8  $\mu\text{m}$ .

10. (currently amended) The method for manufacturing a glass substrate for an information recording medium according to ~~any one of claims 3 to 5, characterized in that~~ wherein when performing the pad dressing process, ~~the~~ a load ~~is of~~ is of 20 to 100  $\text{g}/\text{cm}^2$  is applied.

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11. (currently amended) The method for manufacturing a glass substrate for an information recording medium according to any one of claims 3 to 5, ~~characterized in that~~ wherein task time for performing the pad dressing process is 10 to 60 minutes.

12. (currently amended) A glass substrate for an information recording medium manufactured by the manufacturing method according to ~~any one of claims 1 to 7, characterized in that~~ wherein:

the glass substrate has an arithmetic mean roughness ~~(Ra),~~ which is as measured by an atomic force microscope, of 0.4 nm or less, an undulation height ~~(Wa), which is as~~ measured by a multi-functional disc interferometer with a measuring wavelength ~~( $\lambda$ )~~ of 0.4 to 5.0 nm, of 0.5 nm or less, and a microscopic undulation height ~~(N<sub>Ra</sub>), which is as~~ measured by a three-dimensional surface structure analyzing microscope with a measuring wavelength ~~( $\lambda$ )~~ of 0.2 to 1.4 nm, of 0.15 nm or less.

13. (currently amended) A polishing device for manufacturing a glass substrate for an information recording medium by polishing the surface of a raw material glass plate using a polishing agent, ~~the method for manufacturing a glass substrate for an information recording medium being~~ characterized by device comprising:

a carrier for moving the raw material glass plate about a center of axis; and

a polishing pad formed from a synthetic resin foam, and a pad dresser including abrasive grains, wherein the polishing pad slides on the raw material glass plate when moved by the carrier for roughly polishing the surface of the raw material glass plate while supplying the surface of the raw material glass plate with a polishing agent, and the pad dresser slides on the surface of the polishing pad to polish the polishing pad.

14. (currently amended) The ~~method~~ device for manufacturing a glass substrate for an information recording medium according to claim 13, wherein the pad dresser has a circular-plate shape, and the diameter and thickness are substantially the same as the diameter and the thickness of the raw material glass plate.

15. (new) The method for manufacturing a glass substrate for an information recording medium according to claim 2, wherein the pad dressing process is performed so that polishing rate, which is a value indicating polishing amount per unit time in the first polishing process, is maintained in a predetermined range.

16. (new) The method for manufacturing a glass substrate for an information recording medium according to claim 15,

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wherein, when the polishing rate obtained immediately after the pad dressing process is performed is used as a reference value, the polishing rate is maintained between 80 and 100% of the reference value, and the pad dressing process is performed when the polishing rate is less than 80% of the reference value.

17. (new) The method for manufacturing a glass substrate for an information recording medium according to claim 2, wherein the grit of the pad dresser is #325 to #600.

18. (new) The method for manufacturing a glass substrate for an information recording medium according to claim 2, wherein the rough polishing of the raw material glass plate in the first polishing process is performed until the glass raw plate has an arithmetic mean roughness as measured by an atomic force microscope, of 1.0 nm or less, an undulation height as measured by a multi-functional disc interferometer with a measuring wavelength of 0.4 to 5.0 mm, of 1.0 nm or less, and a microscopic undulation height as measured by a three-dimensional surface structure analyzing microscope with a measuring wavelength of 0.2 to 1.4 mm, is 0.3 nm or less.

19. (new) The method for manufacturing a glass substrate for an information recording medium according to claim 2, wherein the first polishing process is for roughly polishing the surface of the raw material glass plate in two stages,

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pre-polishing and post-polishing, wherein load applied to the glass raw plate by the polishing pad in the first polishing process is greater during pre-polishing than during post-polishing.

20. (new) The method for manufacturing a glass substrate for an information recording medium according to claim 2, wherein after undergoing the pad dressing process, the surface of the polishing pad has an average undulation height as measured by a stylus measuring instrument with a measuring wavelength of 0.25 to 1.4 mm, of 4 to 25  $\mu\text{m}$ , and a surface roughness as measured with a cut-off value of 2.5 mm, of 3 to 8  $\mu\text{m}$ .